

A new *Pandora* (Bivalvia: Pandoridae) from West Africa

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ABSTRACT. A new species of the genus *Pandora* from Senegal is described. The new species is compared with the European and West African species from which it is separated mainly by its smaller size and an elevation on its dorsal border.

RESUMEN. Una nueva especie del género *Pandora* procedente de Senegal es descrita. Se compara con las especies europeas y oesteafricanas, de las que se diferencia, principalmente, por su tamaño menor y por la existencia de una elevación en el borde dorsal.

INTRODUCTION

Few species of the genus *Pandora* Bruguière, 1797 are present along the Eastern Atlantic coasts. Two species are known in the Mediterranean: *Pandora inaequalis* (L., 1758) and *P. pinna* (Montagu, 1803). Recent authors consider other taxa, such as *P. margaritacea* Lamarck, 1801, *P. rostrata* Lamarck, 1818 and *P. tenuis* Jeffreys, 1865 as conspecific (Sabelli et al., 1990, Barash & Danin, 1992, Poppe & Goto, 1993, Macedo, 1996). *P. glacialis* Leach, 1819 occurs in northern Europe (CLEMAM and Boss & Merrill, 1965).

Pandora albida (Röding, 1798) is mentioned by some authors (Tebble, 1966 and Nordsieck, 1969) but it is considered by Poppe & Goto (1991) as a form of *P. inaequalis*. That name is not mentioned in recent works (Bouchet, Le Renard & Gofas, 2001 and CLEMAM). Two species are mentioned in the Canary Islands: *P. pinna* and *P. inaequalis* (Gómez Rodríguez & Pérez Sánchez, 1997). In West Africa, only *P. oblonga* Sowerby, 1830 is known from the northern coast (Dautzenberg, 1910, 1912; Nicklés, 1947, 1950, 1955; Nordsieck, 1969) to Angola (Rolán & Ryall, 1999).

A new species of *Pandora* was found in sediments collected in West Africa. It is described below.

Abbreviations

BMNH: The Natural History Museum, London, Great Britain.

MNCN: Museo Nacional de Ciencias Naturales, Madrid, Spain.

MNHN: Muséum national d'Histoire naturelle, Paris, France.

CJH: collection of José María Hernández, Gran Canaria, Spain.

CER: collection of Emilio Rolán, Vigo, Spain.

CSG: collection of Sandro Gori, Livorno, Italy

SYSTEMATICS

Family PANDORIDAE Rafinesque, 1815

Shell compressed, inequivalve, dorsal border of one valve overlapping other; ligament wanting, resilium internal, occasionally reinforced by elongate lithodesma; dorsal margin edentulous but with laminar buttresses beside resilium; palial line entire (Keen in Moore, 1969).

Genus *Pandora* Bruguière, 1797

Type species: *Pandora inaequalis* (Linnaeus, 1758)

Pandora gorii n. sp.

Figs 1-3, 12-15, 18, 26

Type material. Holotype (Fig. 1) MNCN 15.07/5412; paratypes MNHN (Figs. 12-15) (1); BMNH (1); CER (Fig. 3) (1); CJH (Fig. 2) (1) and CSG (1).

Other material. One associate specimen from the type locality damaged during study.

Type locality. North of the estuary of Ziguinchor, Casamance, Senegal, dredgings at 30 m.

Description. Very thin, elongate, inequivalve shell (Figs 1-3, 12, 13), pearly within, anteriorly rounded and posteriorly rostrate; right valve flat, with two posterior ribs and a narrow plate turned towards opposite valve; left valve concave, without distinct teeth, and with a receptacle for cardinal tooth and posteriorly elongated ribs of right valve; ligament internal.

Ventral margin rather uniformly curved. Umbo hardly prominent. Dorsal margin more elongate (about three times) from the umbo to the posterior end and short anteriorly. Posterior margin straight or slightly convex; anterior margin concave due to the presence of an elevation on its tip.

Prodissoconch (Fig. 18) small, rounded ovoid, with a diameter of 178 μ m.

Periostracum orange, although only fragments subsisted (mainly in the anterior portion of the shell) in the examined specimens.

Dimensions: Holotype 5.1 mm; all the paratypes have about the same or smaller dimensions. Length/height ratio between 1.92 and 2.35.

Distribution. Currently only known from the type locality.

Biotope. The present species was collected in sandy mud sediments, collected by dredging from 30 m in Casamance, Senegal.

Discussion. *Pandora gorii* n. sp. is a very small species, the largest specimen found measuring only about 5 mm in length, which is vastly different from the 25-35 mm of *P. inaequivalvis*, from which it is also distinguished because the shell of the latter is curved laterally, has a very concave posterior margin and a narrower posterior extreme. The profile of the different species are shown in Figs 26-29.

P. pima is larger (20-22 mm) and more convex laterally; the anterior and posterior margins form a obtuse angle, whereas both are in the same line in *P. gorii* n. sp. The prodissoconch is larger.

P. oblonga occurs in West Africa, from Morocco to Angola (Figs 20-25). The shell is larger and relatively wider than *P. gorii*, the anterior margin is straight, and the prodissoconch is slightly larger. The dorsal margin is weakly concave posteriorly and straight anteriorly, lacking of any elevation.

The type material of *P. oblonga*, presumed to be in the BMNH, was not located there (Kathie Way, pers. comm.) and it may be supposed lost. So, the shell figured by Sowerby (1830: pl. 1, *Pandora* sp. f. 10) referred by Sowerby (1874: pl. 1) is the only original representation of this species.

Etymology. The species is named after Sandro Gori, Livorno, Italy.

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REFERENCES

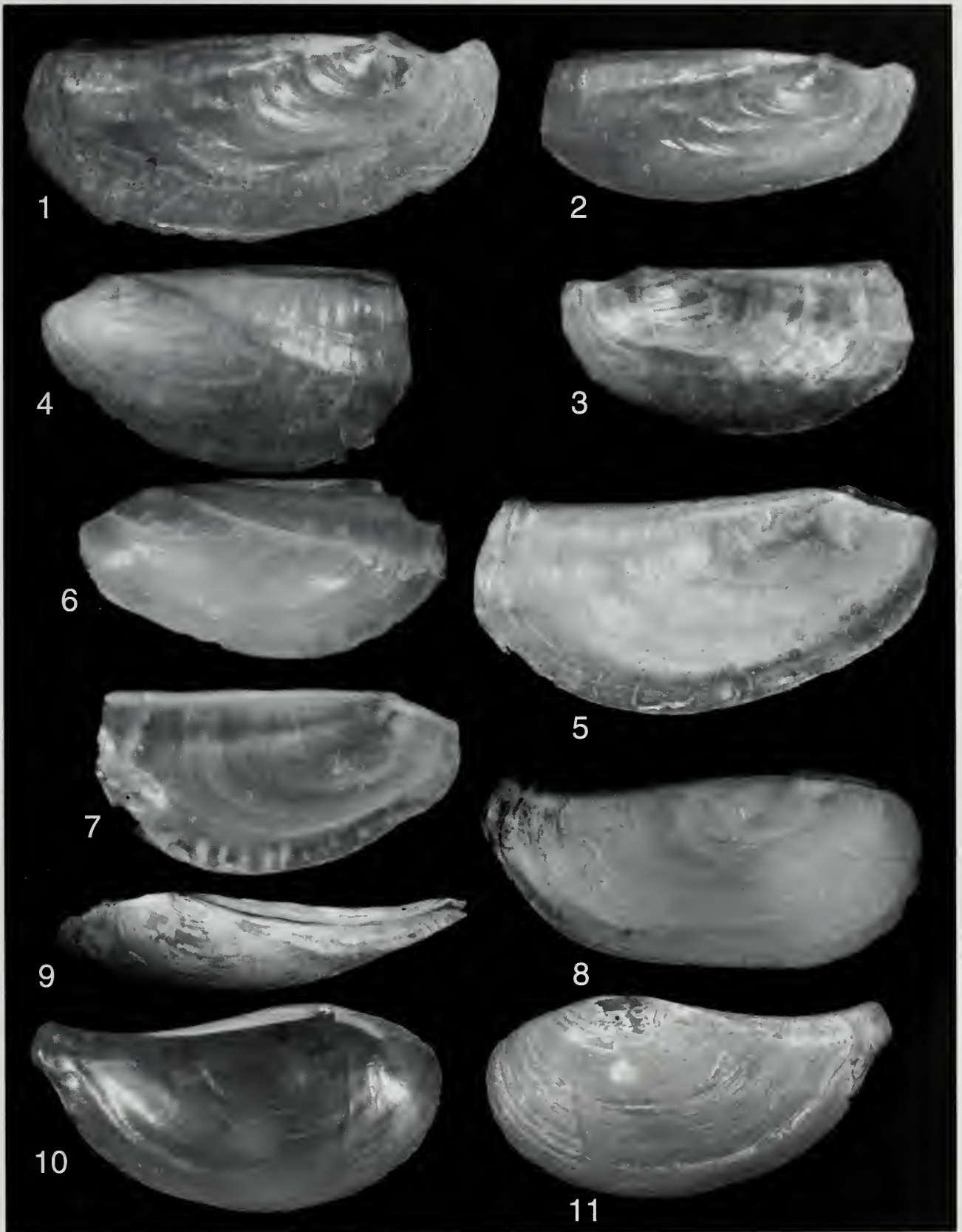
- Barash, A. & Danin, Z. 1992. *Fauna Palestina. Annotated list of Mediterranean molluscs of Israel and Sinai*. The Israel Academy of Sciences and Humanities, Jerusalem: 405 pp.
- Boss, K. J. & Merrill, A. S. 1965. The family Pandoridae in the Western Atlantic. *Johnsonia*, 4: 181-215.
- CLEAM (Checklist of European Marine Mollusca). www.mnhn.fr/mnhn/bimm/cleam/more.htm
- Dautzenberg, P. 1910. Contribution à la faune malacologique de l'Afrique Occidentale. *Actes de la Société Linnéenne de Bordeaux*, 64: 1-174.
- Dautzenberg, P. 1912. Mission Gruvel sur la côte occidentale d'Afrique (1909-1910): Mollusques marins. *Annales de l'Institut Océanographique*, 5(3): 1-111.
- Macedo, M. C. C. 1996. *Rei Dom Carlos, Campanhas Oceanográficas, estudo das coleções malacológicas*. Inapa, Lisboa: 189 pp.
- Moore, R. C. E. 1969. *Treatise on Invertebrate Paleontology. Vol. 2. The Geological Society of America*, Kansas: 952 pp.
- Nicklés, M. 1947. La collection des Mollusques marins testacés de l'IFAN. *Publ. IFAN Catalogues*, 1: 1-23.
- Nicklés, M. 1950. Mollusques testacés marins de la côte occidentale d'Afrique. *Manuels ouest-africains*, Lechevalier, Paris, 2, X + 269 pp.
- Nicklés, M. 1955. Scaphopodes et Lamellibranches récoltés dans l'ouest-africain. *Atlantide Report*, 3: 93-237.

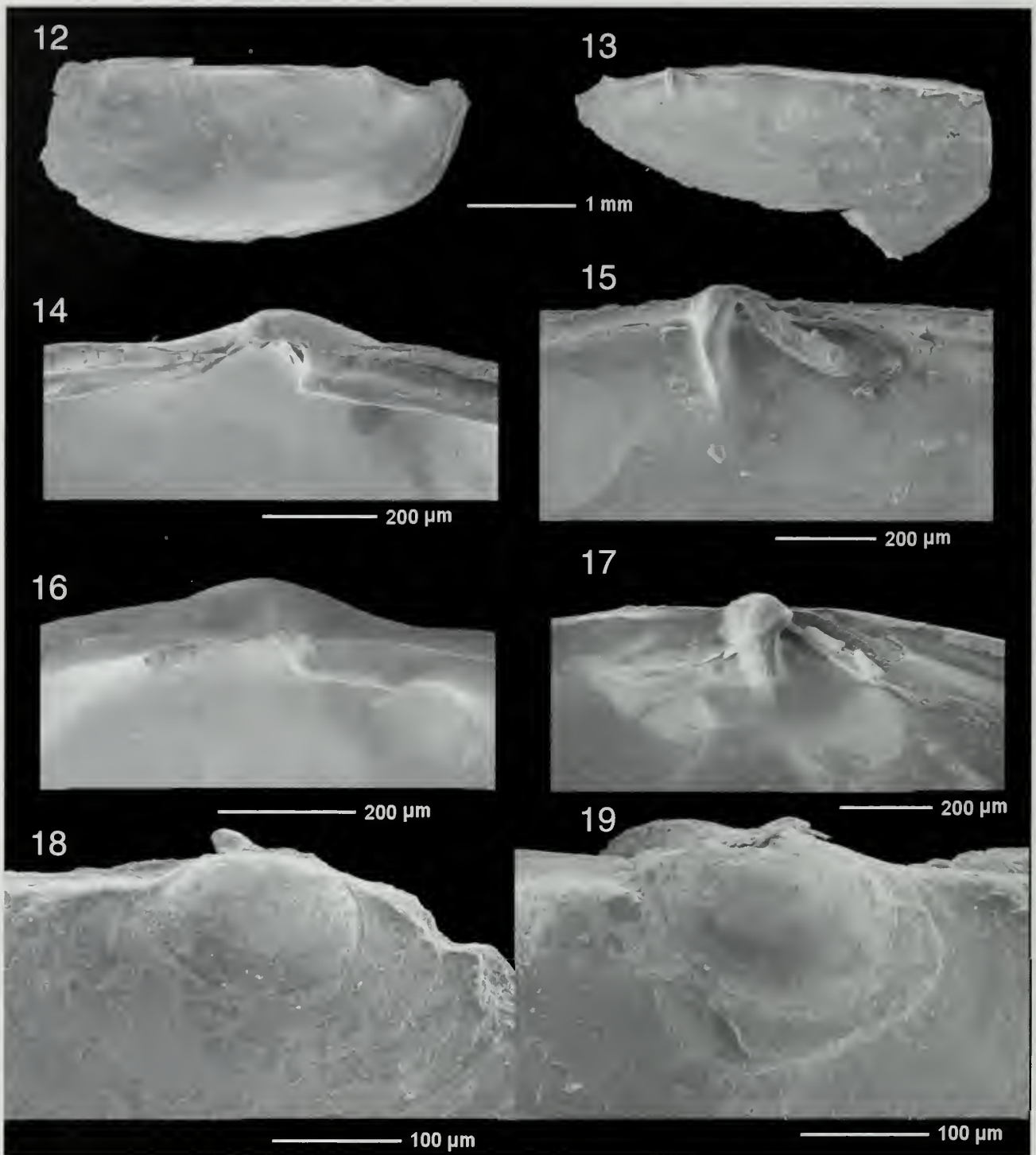
Figures 1-11

1-3. *Pandora gorii* n. sp. 1. North of the estuary of Ziguinchor, Casamance, Senegal, dredgings at 30 m. Holotype, (MNCN), 5.1 mm; 2. paratype, (MNHN), 4.3 mm; 3. paratype, (CJH), 3.8 mm.

4-7. *Pandora pinna*. 4. NW Gran Canaria (CJH), 10.4 mm; 5. Santa Cruz de la Palma (CER), 8.8 mm; 6-7. Fuerteventura (FH39, UTMX611182, Y3136726), 6.2 and 6.3 mm.

8-11. *Pandora inaequivalvis*. 8. Rabat, Morocco (CER), 32 mm; 9-11: Marbella (CJH) 30 mm.

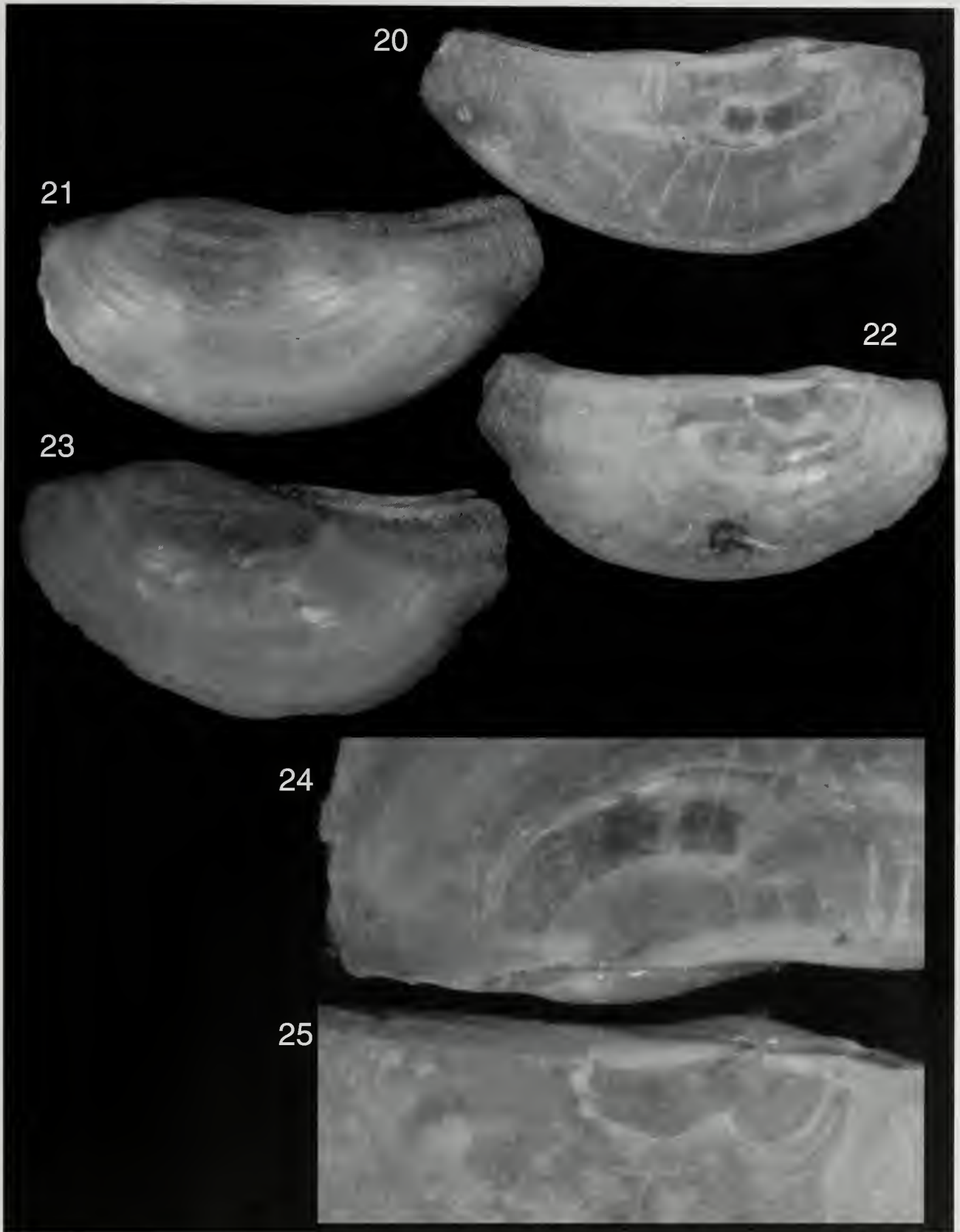




Figures 12-19

12-15, 18. *Pandora gorii* n.sp. 12.-13. Valves of a paratype, (MNHN), 4.3 mm; 14-15. Articular faces of same specimen. 18. Prodissoconch.

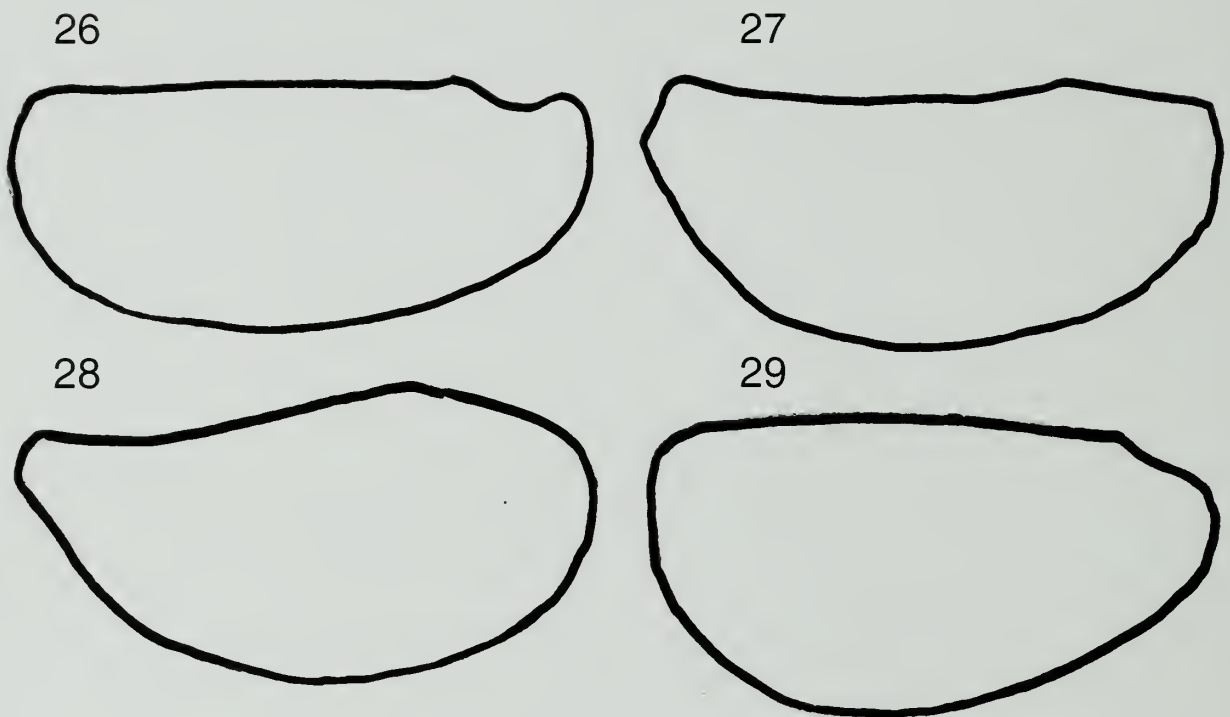
16-17, 19. *Pandora pinna* (Montagu, 1803), Canary Islands. 16-17. Articular faces; 19. Prodissoconch.



Figures 20-25. *Pandora oblonga*. Corimba, Luanda, Angola, 20 m.

20-21, 24. Length 12 mm; 22-23, 25. Length 10.5 mm

- Nordsieck, F. 1969. *Die europäischen Meeresmuscheln. Vom Eismeer bis Kapverden, Mittelmeer und Schwarzes Meer*. Fischer, Stuttgart: 273 pp.
- Poppe, G. T. & Goto, Y. 1993. *European Seashells*. vol 2. Christa Hemmen, Darmstadt: 221 pp.
- Rolán, E. & Ryall, P. 1999. Checklist of the Angolan marine molluscs. *Reseñas Malacológicas*, 10: 1-132.
- Sabelli, B., Giannuzzi-Savelli, R. & Bedulli, D. 1990. *Catalogo annotato dei molluschi marini del Mediterraneo*. Libreria Naturalistica Bolognese, Bologna: 348 pp.
- Sowerby, G.B. 1830. Monographs of the genera *Ancillaria*, *Ovulum* and *Pandora*, in W.J. Broderip, *Species Conchyliorum* or concise original descriptions and observations accompanied by figures of all the species of Recent shells, with their varieties. London, vol. 1: 30 pp.
- Sowerby, G. B. 1874. Monography of the genus *Pandora*, in G. B. Sowerby, *Conchologia Iconica*, vol. 19. London. L. Reeve & Co., pls. 1-3.
- Tebble, N. 1966. *British bivalve seashells*. Trustees of The British Museum (Natural History), London: 212 pp.



Figures 26-29. Profile of *Pandora* species
 26. *P. gorii*. 27. *P. oblonga*. 28. *P. inaequalvis*. 29. *P. pinna*